ORM Corner
is a bi-monthly department.

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The Chute That Nearly Ruined My Day

by Lt. Matt Roberts

We launched from Norfolk in our Sea King in perfect weather for a multiple-drone recovery mission. We had clear skies with unrestricted visibility. Both the pilot in command and I were qualified HACs. The other HAC and crew chief were experienced in the H-3 but had just qualified for the drone-recovery mission. Our second crewman had minimal experience in the aircraft, having recently completed the Fleet Replacement Aircrew syllabus. I was halfway through the qualification process, needing three more recoveries for the qual. Our destination was the warning area east of Dam Neck, where we were tasked to recover three drones.

We flew to the operating area and recovered the first drone. Our problems started when we tried to recover the second drone. The drone's parachute had deployed and released late, causing it to land in the water approximately 50 yards upwind of the shape, instead of farther away from the recovery area. The safety boat was also out of the immediate vicinity because of the improper deployment of the parachute.

With the parachute's relative position to the drone, and the fact that it was submerged, we were sure the chute had completely separated from the drone and thought it would not be a factor in the recovery.

As we hovered over the drone, the rotor wash slowly pushed it toward the parachute. The HAC was flying from the left seat, and he couldn't see the drone drifting toward the parachute, which tangled in the shroud lines as the drone was snared.

Unable to disentangle the shape from the shroud lines, our crew chief offered to use the hoist to free the drone. The crew agreed. Once in the water, the hoist promptly snarled in the parachute's shroud lines.

With the drone and hoist now tangled in the chute, our crew chief tried freeing the hoist by raising the hook a little out of the water to shake the lines loose or even cut them. But this action put tension on the parachute lanyard, allowing the rotor downwash to partly inflate the chute.

Fearing the parachute would further inflate and rise up into the rotor blades, the HAC ordered the crew chief to guillotine the hoist cable. The crew chief immediately reached over and flipped the shear switch. The cartridge-activated device did not fire immediately, but by the time it did, the hoist cable was under tension from the parachute, making the cable hit the right sponson as the cable separated.

Guillotining the hoist cable had the desired effect and the drone disentangled from the parachute. With no damage other than a small tear in the sponson, we continued the recovery operation without further incident.

Although damage to the aircraft was minimal, several contributing factors could have conspired to make it worse.

First, we pressed on with the recovery with the parachute near the drone. The recovery was not urgent enough that we needed to take such risks. We should have reported our position to the range master and allowed the safety boat time to report on station to retrieve the parachute, thereby ensuring a normal recovery.

Second, the pilot flying the helo was in the left seat and couldn't monitor the parachute as the drone was being snared. The other pilot and both crewmen were focused on the drone-recovery training and failed to maintain situational awareness of the approaching chute.

Third, when confronted with the entanglement, the crew agreed to use the hoist to free the drone. We did not fully evaluate the risks associated with this nonstandard procedure, unnecessarily risking damage to the aircraft and injury to the crew. The decision to jettison the hoist cable was sound, but was required only after an ill-fated decision had been made that damaged the aircraft.

Essentially, our crew had a breakdown in both aircrew coordination and ORM. Each year all flight personnel undergo aircrew coordination training to minimize the potential for damage to aircraft and injury. A review of these principles reveals our crew was weak in a number of the areas including situational awareness, decision making and communications.

ORM helps you recognize risks. There are three application levels, with the lowest level being a time-critical analysis of the situation and hazards involved. We failed to fully use this level of ORM and did not adequately identify and assess the potential hazards associated with performing the recovery in the vicinity of a parachute. Without having identified and assessed those hazards, we couldn't make proper risk decisions.

Lt. Roberts flies with HC-2.